

What is claimed is:

1. A safety barrier for a work station having a support surface, a work piece holder on the support surface and having a front end and a rear end, a work piece being held by the work piece holder, and a tool adapted to engage and perform tasks on the work piece, the barrier comprising:
  - a first frame member and a second frame member mounted to the supporting surface on opposite sides of the work piece;
  - an elongated roller extending between the first and second frames and being mounted for rotation about a longitudinal roller axis located in spaced relation above the supporting surface;
  - a flexible safety barrier rolled up on the roller and having an upper barrier end attached to the roller and a free barrier end adapted to move from a rolled up position adjacent the roller to a rolled down position adjacent the supporting surface in response to rotation of the roller about the roller axis;
  - each of the first and second frame members having a guide for guiding the flexible barrier as the free end of the barrier moves from the rolled up position to the rolled down position;
  - the guides of the first and second frame members guiding the lower barrier end sufficiently close to the work piece holder to eliminate sufficient space there between for a human being standing on the support surface; and
  - a switch electrically connected to the tool and having an inoperative position preventing actuation of the tool and an operative position permitting actuation of the tool, the switch being biased to the inoperative position and being located so as to be responsive to engagement by the free end of the flexible barrier and to move from the first position to the second position only when the free end of the flexible barrier is in the rolled down position.

2. A safety barrier according to claim 1 and further comprising a sprocket mounted on the roller, a chain trained around the sprocket and having a first chain end and a second chain end on opposite sides of the sprocket, first and second prime movers connected to the first and second chains respectively and being adapted to move the chain  
5 on the sprocket to cause the roller to rotate and move the flexible barrier between the rolled up and rolled down positions.

3. The safety barrier according to claim 2 wherein the first and second prime movers each comprise an elongated cylinder and a piston and rod assembly longitudinally  
10 extensible relative to the cylinder.

4. The safety barrier according to claim 3 wherein the cylinder and piston and rod assembly are pneumatically operated.

15 5. The safety barrier according to claim 1 wherein the guides of the first and second frame members each comprise an elongated track, the flexible barrier having track followers guided within and by the tracks of the first and second frame members.

20 6. The safety barrier according to claim 5 wherein the track followers comprise a plurality of wheels mounted for rolling movement in the elongated tracks of the first and second frame members.

25 7. The safety barrier of claim 1 wherein the roller is positioned above or to the rear of the front end of the work piece holder, and a crane includes a support member positioned in front of the roller for lifting the work piece and holding the work piece for attachment to the work piece holder.

30 8. The safety barrier according to claim 7 wherein the tracks each include an upper track end positioned above or to the rear of the front end of the work piece holder, an intermediate track positioned in spaced relation in front of the work piece holder, and a lower track extending in a rear direction from the intermediate track.

9. In combination:

a supporting surface;

a work piece holder mounted on the supporting surface and having a front end and a rear  
5 end

a work piece detachably mounted to the work piece holder;

a tool assembly supported on the supporting surface and having a tool end movable to the  
work piece for performing tasks on the work piece;

a first frame member and a second frame member mounted to the supporting surface on  
10 opposite sides of the work piece;

an elongated roller extending between the first and second frames and being mounted for  
rotation about a longitudinal roller axis located in spaced relation above the  
supporting surface;

a flexible safety barrier rolled up on the roller and having an upper barrier end attached to  
15 the roller and a free barrier end adapted to move from a rolled up position adjacent  
the roller to a rolled down position adjacent the supporting surface in response to  
rotation of the roller about the roller axis;

each of the first and second frame members having a guide for guiding the flexible barrier  
as the free end of the barrier moves from the rolled up position to the rolled down  
20 position;

the guides of the first and second frame members guiding the lower barrier end sufficiently  
close to the work piece holder to eliminate sufficient space there between for a  
human being standing on the support surface; and

a switch electrically connected to the tool and having an inoperative position preventing  
25 actuation of the tool and an operative position permitting actuation of the tool, the  
switch being biased to the inoperative position and being located so as to be  
responsive to engagement by the free end of the flexible barrier and to move from  
the first position to the second position only when the free end of the flexible  
barrier is in the rolled down position.

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10. A method for using a flexible barrier for safety purposes comprising:  
mounting a work piece to a work piece holder having a front end and a rear end;  
taking a tool having an actuated state and a non-actuated state;  
lowering a flexible barrier having an upper end and a free end in front of the work piece  
5 holder to a lowered position wherein the upper end of the barrier is above the work  
piece and the free end of the barrier is located below the work piece and sufficiently  
close to the front end of the work piece holder to prevent a human being from  
standing on the supporting surface between the work piece holder and the free end  
of the barrier;  
10 preventing the lower end of the flexible barrier from moving to the lowered position if a  
human being is positioned between the work piece holder and the free end of the  
barrier;  
moving a switch from a normal position preventing actuation of the tool to a second  
position actuating the tool only in response to the movement of the free end of the  
15 barrier to the lowered position, the switch remaining in the normal position at all  
other times.

11. The method according to claim 10 wherein the upper end of the barrier is  
attached to a roller above the work piece and the free end of the barrier is movable to cause  
20 unrolling of the roller as the free end of the barrier moves to the lowered position, the  
method further comprising rotating the roller to cause the free end of the roller to move to  
the lowered position.

12. The method according to claim 10 and further comprising guiding the free  
25 end of the flexible barrier during movement to the lowered position, the guiding step  
including guiding the free end of the flexible barrier from a forward position spaced  
forwardly of the front end of the work piece holder to a rear position located more closely  
to the front end of the work piece holder.

- 30 13. The method according to claim 12 and further comprising positioning the  
roller to the rear of the front end of the work piece holder.

14. The method according to claim 13 and further comprising using a crane to position the work piece for attachment to the work piece holder, the crane being movable to an operative position directly above the work piece holder and being located above and in  
5 front of the roller.